REMARKS

Claims 1-20 were pending in this application.

Claims 1-20 have been rejected.

Claims 1, 8, and 14 have been amended as shown above.

Claims 1-20 remain pending in this application.

Reconsideration and full allowance of Claims 1-20 are respectfully requested.

I.   REJECTION UNDER 35 U.S.C. § 102

The Office Action rejects Claims 1-13 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,991,080 to Emma et al. (*"Emma"*). The Applicants respectfully traverse this rejection.

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. (*MPEP § 2131; In re Bond, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990)*). Anticipation is only shown where each and every limitation of the claimed invention is found in a single prior art reference. (*MPEP § 2131; In re Donohue, 766 F.2d 531, 534, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985)*).

A branch history table 301 in *Emma* controls the prefetching of instructions by a prefetch control 201, which stores the instructions in an instruction buffer 401. (*Col. 7, Lines 13-15*). The sequence of instructions fetched by the prefetch control 201 could be incorrect because the branch history table 301 incorrectly anticipated the result of a branch instruction. (*Col. 7, Lines

15-17). A branch stream coprocessor 501 partially executes branch instructions and condition code setting instructions to determine if the prefetch control 201 prefetched the appropriate sequence of instructions. (*Col. 7, Lines 17-28*). A condition code setting instruction represents an instruction that precedes a branch instruction and that sets a condition to a value, where a branch is taken if the condition's value matches a specified value. (*Col. 1, Lines 37-40*). If the wrong instructions were prefetched, the branch history table 301 is updated. (*Col. 7, Line 29*). Pre-executed instructions are stored in the ready-to-decode buffer 601 and then provided from the buffer 601 to a main stream processor 701 for execution. (*Col. 7, Lines 37-41*).

Claims 1, 8, and 14 recite a "branching cluster" and a "non-branching cluster." Each cluster is "capable of executing instructions and computing branch conditions." The non-branching cluster is "incapable of performing branch address computations." The branching cluster is operable to "perform branch address computations" for the branching cluster and the non-branching cluster.

First, the Office Action relies on the prefetch control 201, instruction buffer 401, ready-to-decode buffer 601, and main stream processor 701 of *Emma* as anticipating the "non-branching cluster" recited in Claims 1, 8, and 14. However, the main stream processor 701 of *Emma* is capable of performing branch address computations. For example, *Emma* specifically recites that the main stream processor 701 performs an address generation step 729 for a branch instruction. (*Col. 21, Lines 6-9; Col. 22, Lines 43-47*). Because element 701 in *Emma* is capable of computing branch addresses, the collection of elements 201, 401, 601, and 701 of *Emma* cannot anticipate a "non-branching cluster" that is "incapable of performing branch address

computations" as recited in Claims 1, 8, and 14.

Second, only two components of *Emma* are capable of "executing instructions and computing branch conditions" – the branch stream coprocessor 501 and the main stream processor 701. As noted above, the branch stream coprocessor 501 partially executes a branch instruction and a condition code setting instruction. The main stream processor 701 is also capable of executing these instructions.

However, *Emma* lacks any mention that one of the processors 501, 701 performs branch address computations for the other processor in response to "sensing a conditional branch instruction" in the other processor. For example, *Emma* lacks any mention that the branch stream coprocessor 501 performs branch address computations in response to sensing a conditional branch instruction in the main stream processor 701. Similarly, *Emma* lacks any mention that the main stream processor 701 performs branch address computations in response to sensing a conditional branch instruction in the branch stream coprocessor 501.

For these reasons, the Office Action does not establish that *Emma* anticipates the Applicants' invention as recited in Claims 1 and 8 (and their dependent claims). Accordingly, the Applicants respectfully request withdrawal of the § 102 rejection and full allowance of Claims 1-13.

II.   REJECTION UNDER 35 U.S.C. § 103

The Office Action rejects Claims 14-20 under 35 U.S.C. § 103(a) as being unpatentable over *Emma* in view of U.S. Patent No. 4,777,589 to Boettner et al. ("*Boettner*"). The Applicants

respectfully traverse this rejection.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. (*MPEP § 2142; In re Fritch, 972 F.2d 1260, 1262, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992)*). The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent Office. (*MPEP § 2142; In re Oetiker, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); In re Piasecki, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984)*). Only when a *prima facie* case of obviousness is established does the burden shift to the applicant to produce evidence of nonobviousness. (*MPEP § 2142; In re Oetiker, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993)*). If the Patent Office does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of a patent. (*In re Oetiker, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); In re Grabiak, 769 F.2d 729, 733, 226 U.S.P.Q. 870, 873 (Fed. Cir. 1985)*).

A *prima facie* case of obviousness is established when the teachings of the prior art itself suggest the claimed subject matter to a person of ordinary skill in the art. (*In re Bell, 991 F.2d 781, 783, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993)*). To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references

when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. (*MPEP § 2142*).

As described above in Section I, the Office Action does not establish that *Emma* anticipates a "branching cluster" and a "non-branching cluster," where each is "capable of executing instructions and computing branch conditions" and the non-branching cluster is "incapable" of performing branch address computations or computing branch addresses. The Office Action cites *Boettner* only as allegedly reciting a "plurality of peripheral circuits." The Office Action does not rely on *Boettner* as disclosing, teaching, or suggesting a "branching cluster" and a "non-branching cluster" that operate as recited in Claim 14.

For these reasons, the Office Action does not establish a *prima facie* case of obviousness against Claim 14 (and its dependent claims). Accordingly, the Applicants respectfully request withdrawal of the § 103 rejection and full allowance of Claims 14-20.

III.   CONCLUSION

The Applicants respectfully assert that all pending claims in this application are in condition for allowance and respectfully request full allowance of the claims.

SUMMARY

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Applicants respectfully invite the Examiner to contact the undersigned at the telephone number indicated below or at *wmunck@davismunck.com.*

The Applicants have included the appropriate fee to cover the cost of a Request for Continued Examination. The Commissioner is hereby authorized to charge any additional fees connected with this communication (including any extension of time fees) or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

DAVIS MUNCK, P.C.

Date: _Feb 28, 2005_

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